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10/618,101

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Joseph R. Byrum

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EXAMINER

ROBINSON, KEITH O NEAL

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/618,101 | Applicant(s) BYRUM ET AL. | |
| | Examiner KEITH O. ROBINSON | Art Unit 1638 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 33-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action and the following **second non-final** Office Action is set forth.
2. Claims 1-32 are under examination.

Election/Restrictions

3. This application contains claims 33-40 drawn to an invention nonelected with traverse in the reply filed on March 9, 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Response to Arguments

4. Applicant's arguments, see page 9 of 'Remarks' filed January 4, 2008, regarding the 35 USC 102/103 rejection on pages 8-10 of the Office Action mailed September 4, 2007 have been fully considered and are persuasive. The rejection has been withdrawn.

Claim Rejections - 35 USC § 112, second paragraph

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The claims recite a mean whole seed total protein content of between 45% and 50%, a mean whole seed total oil content of at least 20% and a mean whole seed total protein plus oil content of between 64% and 70%. These numbers do not add up correctly because the addition of the claimed mean whole seed total protein content and the mean whole seed total oil content would equal to a mean whole seed total protein plus oil content of between 65% and 70%.

Claim Rejections - 35 USC § 112, first paragraph – Written Description

8. Claims 1-32 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection is repeated for the reasons of record as set forth on pages 3-6 of the Office Action mailed September 4, 2007. Applicant's arguments, filed January 4, 2008, have been fully considered but are not persuasive.

Applicant argues that claim 1 was amended to recite soybean variety SN30003 as a parent and that the specification explicitly provides multiple examples

demonstrating that Applicant was in possession of this subject matter at the time of filing (see page 1, 3rd paragraph to page 2, lines 1-16 of 'Remarks' filed January 4, 2008).

This is not persuasive. The claims are broadly drawn to any soybean plant having the claimed characteristics wherein said plant is a progeny plant of soybean variety SN30003, or a subsequent generation thereof; however, the specification only provides evidence that Applicant was in possession of soybean varieties 0007583 (see page 43, line 17 to the top of page 49), 0008079 (see page 49, line 6 to page 52, line 23), 0137335 (see page 52, line 27 to page 54, line 24), 0137472 (see page 54, line 28 to the end of page 56), 0137441 (see page 57, line 3 to page 59, line 25) and 0137810 (see page 59, line 29 to page 62) having the claimed characteristics wherein said plant is a progeny plant of soybean variety SN30003.

Applicant argues that possession has been shown by both actual reduction to practice and by a seed deposit (see page 2, last paragraph to page 3, lines 1-5 of 'Remarks' filed January 4, 2008).

This is not persuasive. The claims do not recite any seed deposits in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In addition, a deposit of seed only describes the seed deposited. Applicant does not describe any structure in the deposited seed that produces the claimed characteristics such as protein content, oil content or commercially significant yield.

Applicant argues that the Examiner has provided no clear evidence why a person skilled in the art of plant breeding would not recognize that the written description of the invention provides support for the claims and that by repeatedly asserting that lines 0007583 and others are described the previous Office Actions actually provide clear evidence why one of skill in the art would indeed recognize that the inventors had possession of the claimed subject matter (see page 3, 1st full paragraph of 'Remarks' filed January 4, 2008).

This is not persuasive. One of skill in the art would not recognize that Applicant had possession of the claimed subject matter because the claimed subject matter is broadly drawn to any soybean plant having the claimed characteristics wherein said plant is a progeny plant of soybean variety SN30003, or a subsequent generation thereof; but, the specification only provides evidence that Applicant was in possession of soybean varieties 0007583 (see page 43, line 17 to the top of page 49), 0008079 (see page 49, line 6 to page 52, line 23), 0137335 (see page 52, line 27 to page 54, line 24), 0137472 (see page 54, line 28 to the end of page 56), 0137441 (see page 57, line 3 to page 59, line 25) and 0137810 (see page 59, line 29 to page 62) having the claimed characteristics wherein said plant is a progeny plant of soybean variety SN30003.).

Applicant argues that multiple examples of soybean lines displaying the claimed characteristics are described in the specification and seed of line 0007583 has been deposited in accordance with 37 CFR 1.801, thus satisfying the standard for written description (see page 3, last paragraph to page 4, bridging paragraph of 'Remarks' filed January 4, 2008).

This is not persuasive. The claims do not recite any of the multiple examples of soybean lines displaying the claimed characteristics or seed of line 0007583 in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that the Examiner has not provided any reasoning why the recited steps of method claims 16-28, 30 and 31 are not clearly described for one of skill in the art of plant breeding (see page 4, last paragraph to page 5, lines 1-2 of 'Remarks' filed January 4, 2008).

This is not persuasive. The starting materials used in the recited method steps are not adequately described; thus, the claimed methods are not adequately described.

Applicant argues that the detailed description and working examples fully support the claimed methods and cite for an example that line 0007583 has been deposited as accession number PTA-5764 and that the specification has been amended to indicate this (see page 5, 1st paragraph of 'Remarks' filed January 4, 2008).

This is not persuasive. As stated above, Applicant is arguing limitations that are not recited in the rejected claims. The rejected claims do not recite any of the deposited soybean lines.

Applicant argues that the plant of claim 32 describes a resulting plant as grown from ATCC accession PTA-5764 and that such a plant may clearly be recognized by one of skill in the art for instance by testing mean whole seed oil content, mean whole

seed protein content, mean whole seed protein plus oil content and yield (see page 5, last paragraph of 'Remarks' filed January 4, 2008).

This is not persuasive. As stated above, Applicant is arguing limitations that are not recited in the rejected claims. The rejected claims do not recite a soybean plant deposited under ATCC accession PTA-5764. In addition, testing for mean whole seed oil content, mean whole seed protein content, mean whole seed protein plus oil content and yield does not provide evidence that Applicant was in possession of the claimed invention.

Claim Rejections - 35 USC § 112, first paragraph - Enablement

9. Claims 1-29 and 32 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for soybean varieties 0007583, 0008079, 0137335, 0137472, 0137441 and 0137810, does not reasonably provide enablement for each and every progeny of soybean variety SN30003. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The rejection is repeated for the reasons of record as stated on pages 6-7 of the Office Action mailed September 4, 2007. Applicant's arguments, filed January 4, 2008, have been fully considered but are not persuasive.

Applicant argues that the specification provides sufficient disclosure to satisfy the enablement requirement in that the specification provides working examples within the scope of the claims and the teachings of the specification combined with the knowledge

of one of ordinary skill in the art provides sufficient guidance to practice the invention (see page 6, 2nd paragraph to page 7, lines 1-6 of 'Remarks' filed January 4, 2008).

This is not persuasive. The claims read on any soybean plant having the claimed characteristics wherein said soybean plant is a progeny of soybean variety SN3003; however, the working examples only teach how to make and use soybean varieties 0007583, 0008079, 0137335, 0137472, 0137441 and 0137810. In addition, the claims recite no deposit information so it would require undue trial and error experimentation to reproduce variety SN30003.

Applicant argues that the Examiner continues to assert a lack of enablement without any further reasoning or support (see page 7, 1st full paragraph of 'Remarks' filed January 4, 2008).

This is not persuasive. As stated in the above argument, the claims read on any soybean plant having the claimed characteristics wherein said soybean plant is a progeny of soybean variety SN3003; however, the specification only teaches how to make and use soybean varieties 0007583, 0008079, 0137335, 0137472, 0137441 and 0137810.

Claim Rejections - 35 USC § 103

10. Claims 1-32 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Wilcox (Crop Sci. 38: 900, 1998), in view of Conway (U.S. Patent No. 6,140,556, October 31, 2000). The rejection is repeated for the reasons of record as set forth on

pages 7-8 and 10-12 of the Office Action mailed September 4, 2007. Applicant's arguments, filed January 4, 2008, have been fully considered but are not persuasive.

Applicant argues that although SN30003 might be used in a cross with a second variety that displays 20% seed oil content, a skilled soybean breeder simply would have had no expectation of success, i.e. that any resulting progeny plant line would simultaneously display the claimed characteristics, such as the claimed simultaneous levels of seed oil content, seed protein content and seed oil plus seed protein content (see page 7, last paragraph to page 8, lines 1-9 of 'Remarks' filed January 4, 2008).

This is not persuasive. The specification teaches that C1944 is soybean variety SN30003 (see page 43, lines 21-24). Wilcox teaches that C1944 is an agronomically elite soybean plant having a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and a commercially significant yield (see page 900, 1st column) and Conway teaches using a soybean cultivar in a cross with another soybean cultivar to produce novel soybean cultivars. Thus, one of ordinary skill in the art would have had an expectation of success, i.e. that any resulting progeny plant line would simultaneously display the claimed characteristics, such as the claimed simultaneous levels of seed oil content, seed protein content and seed oil plus seed protein content because Conway teaches "[b]reeding programs combine desirable traits from two or more cultivars...into breeding pools from which cultivars are developed by selfing and selection of desired phenotypes...[and] [t]he new cultivars are evaluated to determine which have commercial potential" (see column 2, lines 52-56). One of ordinary skill in the art would

recognize that desirable trait lacking in soybean variety SN30003 could be supplemented in any progeny by crossing soybean variety SN30003 with another soybean plant that had the desired trait to produce progeny having the claimed characteristics. See MPEP 2141(II) (C) where it states, "A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton."KSR, 550 U.S. at ___, 82 USPQ2d at 1397. "[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle."Id. Office personnel may also take into account "the inferences and creative steps that a person of ordinary skill in the art would employ."Id. at ___, 82 USPQ2d at 1396".

Applicant argues that the Wilcox reference does not describe characteristics of progeny plants and only states that the lines of Wilcox might be useful in further breeding attempts that could minimize reductions in oil content without describing any actual resulting oil content or oil plus protein content (see page 8, 1st full paragraph of 'Results' filed January 4, 2008).

This is not persuasive. Wilcox teaches that soybean line C1944 (i.e., soybean variety SN30003) will be useful for increasing seed protein while minimizing reductions in seed oil content (see page 900, 1st column, 1st paragraph). It is known in the art that protein and oil have a negative correlation in soybean (i.e., when one is high the other is typically low). However, soybean line C1944 has high protein content as well as good oil content. Thus, based on the teachings of Conway, as discussed above, it would be obvious to one of ordinary skill in the art to use soybean line C1944 (i.e. soybean variety SN30003) in a cross with another soybean line to produce a soybean line with the

claimed characteristics of the claimed invention because, as discussed above, Conway teaches that soybean varieties can be crossed to produce progeny with desired traits.

Applicant argues that there would have been no expectation that progeny of such a cross, in any subsequent generation, would have displayed the claimed characteristics in particular the simultaneous claimed levels of seed oil, seed protein and seed protein plus seed oil and that the combined references are at best an invitation to experiment further, but with no expectation of success (see page 10, 2nd paragraph of 'Remarks' filed January 4, 2008).

This is not persuasive. As discussed above, Wilcox teaches that C1944 is an agronomically elite soybean plant having a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and a commercially significant yield (see page 900, 1st column) and Conway teaches using a soybean cultivar in a cross with another soybean cultivar to produce novel soybean cultivars. Thus, one of ordinary skill in the art would have had an expectation of success, i.e. that any resulting progeny plant line would simultaneously display the claimed characteristics, such as the claimed simultaneous levels of seed oil content, seed protein content and seed oil plus seed protein content because Conway teaches “[b]reeding programs combine desirable traits from two or more cultivars...into breeding pools from which cultivars are developed by selfing and selection of desired phenotypes...[and] [t]he new cultivars are evaluated to determine which have commercial potential” (see column 2, lines 52-56). One of ordinary skill in the art would recognize that desirable trait lacking in soybean variety SN30003 could be

supplemented in any progeny by crossing soybean variety SN30003 with another soybean plant that had the desired trait to produce progeny having the claimed characteristics. See MPEP 2141(II) (C) where it states, "A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton." KSR, 550 U.S. at ___, 82 USPQ2d at 1397. "[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." Id. Office personnel may also take into account "the inferences and creative steps that a person of ordinary skill in the art would employ." Id. at ___, 82 USPQ2d at 1396".

Applicant argues that because of the known strong negative correlation between seed oil content and seed protein content a skilled worker would not have expected that the claimed oil and protein levels could be achieved in a progeny plant (see page 10, 3rd paragraph of 'Remarks' filed January 4, 2008).

This is not persuasive. Wilcox teach that soybean line C1944 (i.e. soybean variety SN30003) is a high protein soybean line that has an oil content of about 18.4% (see page 900, 1st column). This soybean line has an oil content that does not decrease in view of its higher protein content and based on the teachings of Conway, as discussed above, it would be obvious to one of ordinary skill in the art to use soybean line C1944 (i.e. soybean variety SN30003) in a cross with another soybean line to produce a soybean line with the claimed characteristics of the claimed invention because, as discussed above, Conway teaches that soybean varieties can be crossed to produce progeny with desired traits.

Applicant argues that the assertion that one of ordinary skill in the art would have had a reasonable expectation of success is mistaken and is not supported by the cited art because increasing seed protein while minimizing reductions in seed oil content is not at all equivalent to achieving the claimed seed oil, protein and protein plus oil levels (see page 10, last paragraph to page 11, lines 1-2 of 'Remarks' filed January 4, 2008).

This is not persuasive. One of ordinary skill in the art would have had a reasonable expectation of success based on the combined teachings of the cited references. The Wilcox reference teaches soybean line C1944 (i.e., soybean variety SN30003) having a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and a commercially significant yield. It would be obvious to one of ordinary skill in the art that a soybean plant having a high oil content can be crossed with soybean line C1944 (i.e., soybean variety SN30003) and progeny having the claimed characteristics can be selected based on the teachings of Conway, as discussed above.

Claim Rejections - 35 USC § 102/103

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-12, 14, 15, 29 and 32 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wilcox (Crop Sci. 38: 900, 1998). The claims read on any agronomically elite soybean plant of a variety having a mean whole seed total protein content of between 45% and 50%, a mean whole seed total protein plus oil content of between 64% and 70%, a mean whole seed total oil content of at least 20%, and a commercially significant yield, wherein the soybean plant is a progeny plant of soybean variety SN30003, or a subsequent generation thereof. The claims read on selfing SN30003 or crossing SN30003 with itself.

Wilcox teaches an agronomically elite soybean plant, namely C1944, having a mean whole seed total protein content of between 45% and 50%, a mean whole seed total protein plus oil content of between 64% and 70%, and a commercially significant yield (see page 900).

The specification teaches that “SN30003 corresponds to variety c1944” (see page 43, line 22).

Wilcox does not teach that C1944 (also known as SN30003) has 20% seed oil content; however, Wilcox does teach that C1944 (also known as SN30003) has a mean seed oil of 18.4% (see page 900, 1st column). Therefore, one of ordinary skill in the art would understand that a mean would encompass seed that had oil above 18.4% wherein said seed would have at least 20% seed oil.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant’s invention to use the teachings of Wilcox to produce the claimed invention.

One of ordinary skill in the art would have been motivated to use these teachings because Wilcox teaches, “[t]he lines will be useful for increasing seed protein while minimizing reductions in seed oil content (see page 900, 1st column, 1st paragraph).

In addition, one of ordinary skill in the art would have reasonable expectation of success because Wilcox teaches a soybean plant having a mean whole seed total protein content of between 45% and 50%, a mean whole seed total protein plus oil content of between 64% and 70%, and a commercially significant yield.

Conclusion

15. No claims are allowed.

Contact Information

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH O. ROBINSON whose telephone number is (571)272-2918. The examiner can normally be reached Monday – Friday, 7:30 a.m. - 4:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Keith O. Robinson, Ph.D.
Examiner
Art Unit 1638
/David H Kruse/
Primary Examiner, Art Unit 1638
August 18, 2008